

U.S. Patent Application Serial No. **10/634,840**
Amendment filed May 23, 2005
Reply to OA dated February 24, 2005

REMARKS

Claims 1-3 are pending in this application. No amendment is made herein to the claims. The title of the invention has been amended. Applicant respectfully submits that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **February 24, 2005**.

The title of the invention is not descriptive. (Office action paragraphs no. 1-2)

The title has been amended as suggested by the Examiner.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Thiel (US 5,752,303).

(Office action paragraph no. 3)

The rejection of claim 1 is respectfully traversed, and reconsideration of the rejection is requested.

In the rejection, the Examiner assigns the elements in Thiel as follows:

Thiel

Layer 2
Chamber 104; Delivery manifold 151
Nozzle channels 112
Ink channels 111
Delivery channels 110
Ink channels 111

Present claim 1

Head main body (3)
Pressure chambers (112)
Nozzles (120)
Common ink passage (110)
Communicating passage (81)
Ink supply port (51)

However, Applicant respectfully disagrees with some of these assignments, and also argues that several elements recited in claim 1 are not disclosed in Thiel. Applicant respectfully submits that a more appropriate correspondence of elements between Thiel and claim 1 is as follows. (Applicant notes that this correspondence between the reference and the present invention does not limit the scope of the claims of the present invention.)

Thiel

Chamber plate 2, 3, and nozzle plate 4
Chamber 104
Nozzle channel 112
Delivery manifold 151
Actuator 10
Not disclosed
Not disclosed
Not disclosed
Not disclosed

Present claim 1

Head main body (3)
Pressure chamber (112)
Nozzles (120)
Common ink passage (110)
Pressurizers (140)
Ink supply part (50)
Communicating passage (81)
Joint portion
Substrate (122)

Applicant here addresses the Examiner's assigned correspondences.

The Examiner has assigned Thiel's delivery channel 110 as corresponding to the communicating passage (81) in the present invention. However, Thiels's delivery channel 110 is an individual supply passage connecting delivery manifold 151 with each of the chambers 104 (see Thiel's Fig. 2a; column 8, lines 20-23). Thiel's delivery channels 110 are horizontal, and are clearly not formed by removing substrate. Thiel's delivery channels 110 are roughly analogous to ink supply passages (114) in the present specification (see, for example, Fig. 21).

By contrast, "communicating passage (81)" is a passage for communicated connection between the ink supply port (51) of the ink supply part (50) (that is, the ink tank) and the common

U.S. Patent Application Serial No. 10/634,840
Amendment filed May 23, 2005
Reply to OA dated February 24, 2005

ink passage (110) inside the head (Fig. 1), and is formed by removing substrate. Communicating passage 81 is clearly different from Thiel's delivery channel 110 in its structure and its function, and Thiel does not disclose the claimed step forming the communicating passage.

With regard to the recited "joint portion," the Examiner states that Figs. 3a-3e in Thiel illustrate "forming a residual portion of said substrate on said head main body as a joint portion ..." However, the Examiner does not indicate which element of Thiel in these figures corresponds to the "residual portion" or "joint portion".

Applicant notes that in the present application, the joint portion appears as joint section 8 in Fig. 1, and as joint section 8a or 8b in the other figures. Page 17, line 5, indicates that:

"the joint section 8 is formed **protusively** in a surface on the opposite side ... to the formation of the nozzles 120 in the head main body 3, and is made to surround the discrete electrodes 109 on the surface of the head main body" (emphasis added)

Claim 1 specifically recites a step of "forming a residual portion of said substrate (122) on said head main body (3) as a joint portion for joining said ink supply part (50) to said head main body (3)."

Applicant submits that there is no corresponding structure or method step in Thiel.

Applicant further notes that Thiel does not appear to disclose the following other structural elements recited in claim 1: ink supply part (50) and substrate (122).

In view of these structural differences and the differences between the disclosed manufacturing method of Thiel and the recitation of claim 1, Applicant submits that claim 1 is not anticipated by, and further, is not obvious over, Thiel (US 5,752,303).

U.S. Patent Application Serial No. 10/634,840
Amendment filed May 23, 2005
Reply to OA dated February 24, 2005

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thiel in view of Kanno et al. (US 6,347,862). Office action paragraph no. 4)

The rejection of claim 2 is respectfully traversed, and reconsideration of the rejection is requested.

As discussed above, Applicant disagrees with the Examiner that Thiel discloses the limitations of base claim 1.

Kanno et al. is cited in column 20, lines 1-14, for disclosure of a substrate made of magnesium oxide. However, the disclosure of Kanno et al. does not repair the deficiencies in the disclosure of Thiel with regard to claim 1. Notably, Kanno et al. does not disclose a joint portion, nor removing the MgO to make a communicating passage. Therefore, no *prima facie* case of obviousness can be made using the cited references, and claim 2 is novel and not obvious over Thiel and Kanno et al., taken separately or in combination.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thiel in view of Ageishi (US 4,733,447). Office action paragraph no. 5)

The rejection of claim 3 is respectfully traversed, and reconsideration of the rejection is requested.

As discussed above, Applicant disagrees with the Examiner that Thiel discloses the limitations of base claim 1 or intervening claim 2.

Ageishi is cited for the disclosure of removal of the substrate by photoetching. However, the

U.S. Patent Application Serial No. 10/634,840
Amendment filed May 23, 2005
Reply to OA dated February 24, 2005

disclosure of Ageishi does not repair the deficiency in the disclosure of Thiel with regard to the claim

2. Ageishi does not disclose a joint portion, nor removing the MgO to make a communicating passage. Therefore, no *prima facie* case of obviousness can be made using the cited references, and claim 3 is novel and not obvious over Thiel and Ageishi, taken separately or in combination.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

U.S. Patent Application Serial No. 10/634,840
Amendment filed May 23, 2005
Reply to OA dated February 24, 2005

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,
HANSON & BROOKS, LLP


Daniel A. Geselowitz, Ph.D.
Agent for Applicants

Reg. No. 42,573

DAG/lrj
Atty. Docket No. 020755A
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



23850

PATENT TRADEMARK OFFICE

H:\FLOATERS\dgeselowitz\02\020755A\020755A AMENDMENT F. filed 5-23-05